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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/733,904

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BTO-103-B

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05/03/2006

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EXAMINER

MCKANE, ELIZABETH L

ART UNIT

PAPER NUMBER

1744

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/733,904

Applicant(s)

BATES ET AL.

Examiner

Leigh McKane

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18, 20, 22-28, 30-33, 35 and 37-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18, 20, 22-28, 30-33, 35 and 37-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

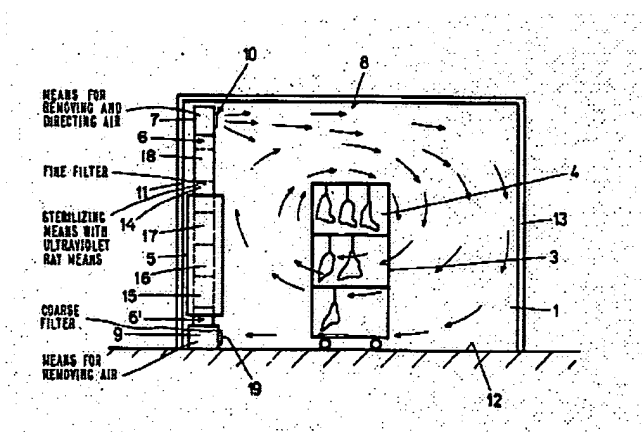
1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8, 10-14, 28, 30, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amann (US 4,484,517) in view of Owesen (US 5,891,399).

With respect to claims 1-8, 10-12, and 14, Amann teaches a method of maintaining an enclosed space free of fungi, the enclosed space 1 having a floor surface 12. See col.1, lines

2-10. In the method of Amann, air is collected from a plurality of locations 19 proximate the floor 12 surface, delivered to a central chamber 5 positioned within the enclosed space 1, subjecting the flow of air to air conditioning, UV radiation 14, and moving the air with a blower 16 through the chamber to a plurality of outlets 10. See Figures 1 and 3.



Although Amann doesn't specifically teach that the enclosed space is located within a building structure, it would have been obvious to one of ordinary skill in the art at the time of the invention that the enclosed space would have been part of a larger meat packing/processing plant having human workers and would not have been a stand-alone building structure. Meat

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packing/processing plants generally have several floor levels. In the invention of Amann, the air is not irradiated prior to the blower. Owesen, however, discloses an air purification/irradiation device and method wherein air is irradiated at **104n** before it reaches the blower **105**. See Figure 7. As Amman indicates that the sterilizing unit **14** “can be located at different positions in the closed cycle of flow through the air conditioning unit” (col.3, lines 37-40), it is deemed obvious to position the UV unit **14** of Amman in a position prior to the blower, in the manner of Owesen.

As to claim 13, Amman does not teach a means for detecting the presence of a human being. Owesen, however, discloses that it was known in the art at the time of the invention to include in an air purifying system, an IR motion detector in order to detect the presence of a human or animal in the vicinity of UV radiators. See col.6, lines 24-31. As Owesen discloses that these detectors cut off current to the UV lamps when motion is detected, thereby preventing harm to humans or animals due to UV rays, they would have been an obvious addition to the system of Amman which is situated within a room in which humans would enter.

3. Claims 5-8 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wetzel (US 5,225,167) in view of Amman.

Wetzel teaches a method for maintaining or improving indoor air quality within an

enclosed space wherein microorganisms are destroyed. The method entails collecting air from a location **16** proximate a floor surface, delivering the collected air to a central chamber **10** located within the enclosed space, positioning a blower **20** within the chamber and treating the air in a germicidal fashion with ultraviolet light **19** at 254 nm as it flows to the blower. Afterwards the treated air is exhausted through outlet **22** into the

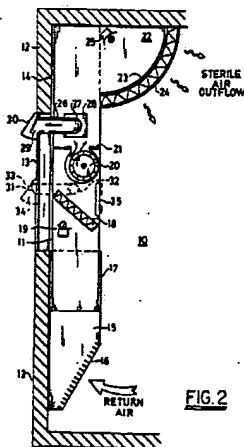


FIG. 2

enclosed space. Wetzel further indicates that the lower end of the housing (air inlet) can be located with a false floor of the room, wherein air enters the housing through multiple perforations, creating a generally laminar airflow.

Wetzel does not disclose that the method is effective to destroy fungi or that the enclosed space is located within a building structure having an upper and lower enclosed space. However, as the air purifier of Wetzel is disclosed to be used in hospitals and medical offices, it would have been obvious to use the purifier in multi-level structures, as hospitals and medical offices are generally in multi-level complexes.

Amman teaches the use of UV radiation for destroying fungi in recirculated air. See col.2, lines 2-10. It would have been obvious to employ the method of Wetzel '167 of improving indoor air quality to improve indoor air contaminated with fungi, since UV radiation has been shown by Amman to be effective in the destruction of fungi.

4. Claims 9, 33, 35, and 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wetzel and Amman as applied to claims 8 and 32 above, and further in view of Walkinshaw et al. (US 4,843,786).

With respect to claims 9 and 33, the combination of Wetzel with Amman is silent as to a finished basement area including paneling wherein the fungi killing zone is created in the space between the paneling and a foundation wall. Walkinshaw et al. teaches a method of maintaining a building free of fungi (col.2, lines 38-43) wherein the building includes a finished basement area 13 having paneling 25 and wherein the space between paneling 25 and exterior walls 1 is ventilated to remove excess moisture therefrom, which excess moisture promotes mold and mildew growth. As it has already been established that it would have been obvious to employ

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the method of Wetzel to purify air located within any level of a multi-level structure, it is deemed obvious to use the method of Wetzel to purify air located within a finished basement, especially as Walkinshaw et al. evidences that basements are particularly prone to mold and mildew growth due to excess moisture levels. Moreover, as Walkinshaw et al. further teaches that the cavity 11 located between the paneling and the exterior foundation wall 1 is a location likely to exhibit mold/mildew growth due to excess moisture, it would have been obvious to use the method of Wetzel to treat the air located therein.

As to claim 35, the blower 20 is located "proximate" the upper enclosed space.

With respect to claims 37-39, it is deemed obvious to duplicate the number of UV lamps 19 in the inlet of Wetzel as it has been held to be obvious to duplicate parts for a multiplied effect. In the instant case, the duplication of UV lamps would have the known effect of increasing the germicidal effect of the radiation.

5. Claims 15-18, 20, and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amman in view of Owesen.

With respect to claims 15-18, Amman teaches an apparatus for abating fungi in an enclosed space 1 having a floor surface 12. See col.1, lines 2-10. In the device of Amann, air is collected from a plurality of conduits 19 having inlets proximate the floor 12 surface and outlets in communication with air inlet 9 which is in communication with a blower 16 air inlet. The air is subjected to a source of UV radiation 14 before being exhausted through exhaust conduit 7 and outlets 10. See Figures 1 and 3. Although Amann doesn't specifically teach that the enclosed space is located within a building structure, it would have been obvious to one of ordinary skill in the art at the time of the invention that the enclosed space would have been part of a larger

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meat packing/processing plant having human workers and would not have been a stand-alone building structure. Meat packing/processing plants generally have several floor levels. In the invention of Amann, the air is not irradiated prior to the blower. Owesen, however, discloses an air purification/irradiation device and method wherein air is irradiated at 104n before it reaches the blower 105. See Figure 7. As Amman indicates that the sterilizing unit 14 “can be located at different positions in the closed cycle of flow through the air conditioning unit” (col.3, lines 37-40), it is deemed obvious to position the UV unit 14 of Amman in a position prior to the blower, in the manner of Owesen.

As to claim 20, the intake conduits of Amann do not have the claimed configuration, but it is deemed obvious regardless to configure the conduits as desired and based upon the enclosed space dimensions. Such is readily determinable through routine experimentation by one of ordinary skill in the art and is not deemed to patentably distinguish the instant claims from the method and apparatus of the combination.

With respect to claims 22-24, it is deemed obvious to duplicate the number of UV lamps 19 in the apparatus of Amman with Owesen as it has been held to be obvious to duplicate parts for a multiplied effect. In the instant case, the duplication of UV lamps would have the known effect of increasing the germicidal effect of the radiation.

6. Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amann in view of Owesen as applied to claim 24 above, and further in view of Jackson.

With respect to claim 25, Amann fails to teach a means for sensing humidity, wherein the humidity sensor activates the blower unit. Jackson discloses multiple humidistats 90 which sense the humidity within lower enclosed space 68. When the humidity exceeds a predetermined

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level, humidity switches 88 close, enabling power to be supplied to the blower unit. See col.4, lines 60-65. As this arrangement assures removal of humid air from the enclosed space while preventing energy waste of the UV lamps, it would have been an obvious addition to the combination of Amann in view of Owesen.

Amann fails to teach a means for detecting the presence of a human in the enclosed space. Owesen, however, discloses that it was known in the art at the time of the invention to include in an air purifying system, an IR motion detector in order to detect the presence of a human or animal in the vicinity of UV radiators. See col.6, lines 24-31. As Owesen discloses that these detectors cut off current to the UV lamps when motion is detected, thereby preventing harm to humans or animals due to UV rays, they would have been an obvious addition to the apparatus of the combination.

Response to Arguments

7. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion


8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Truhan teaches the use of UV radiation to purify air. The air is drawn through a plurality of inlets located proximate a floor.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leigh McKane whose telephone number is 571-272-1275. The examiner can normally be reached on Monday-Thursday (5:30 am-2:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Corcoran can be reached on 571-272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Leigh McKane
Primary Examiner
Art Unit 1744

elm
1 May 2006